

CLAIMS

What is claimed is:

- 5 1. A method for controlling zoning within a device, the method comprising the steps of:
 receiving a generic zone control command;
 translating the generic zone control command to at least one vendor specific
device command of a plurality of vendor specific device commands that respectively
control zoning in a plurality of different vendor devices; and
10 performing functions associated with the at least one vendor specific device
command to control zoning in a device.
2. The method of claim 1 wherein the step of translating includes the steps of:
 identifying a vendor of at least one device within a zone corresponding to the
15 generic zone control command; and
 selecting a set of vendor specific device commands, from the plurality of vendor
specific device commands that respectively control zoning in devices from different
vendors, that corresponds to the vendor of at least one device within the zone.
- 20 3. The method of claim 2 wherein the step of selecting a set of vendor specific device
commands selects the set of vendor specific device commands that are specific to a
vendor of a device that exists within the zone to which the generic zone control command
is directed.
- 25 4. The method of claim 2 wherein the step of identifying includes the steps of:
 identifying devices within the zone that are affected by the generic zone control
command; and
 identifying vendors of the devices within the zone that are affected by the generic
zone control command.

5. The method of claim 1 wherein:

the plurality of vendor specific device commands include sets of vendor specific device commands; and

5 wherein the step of translating includes the steps of:

selecting a set of vendor specific device commands that can control zoning within a device to which the generic zone control command is directed; and

10 dynamically loading the set of vendor specific device commands into a management application to allow the management application to control zoning within the device to which the generic zone control command is directed.

6. The method of claim 5 wherein the step of translating includes steps of:

15 selecting the at least one vendor specific device command, within the set of vendor specific device commands, that performs zoning operations, in the device to which the generic zone control command is directed, in accordance with the generic zone control command; and

20 mapping parameters of the generic zone control command to parameters of the at least one vendor specific device command to provide the vendor specific device command with data required to perform the zoning operations in the device.

25 7. The method of claim 5 wherein the set of vendor specific device commands is selected based on an identity of a vendor of the device to which the generic zone control command is directed.

8. The method of claim 1 wherein the step of receiving receives the generic zone control command from a device management application that can control zoning in a network of devices manufactured by different vendors.

9. The method of claim 1 wherein the step of performing performs the at least one vendor specific device command to control zoning within a device from a vendor that is a vendor of devices that are controlled by the vendor specific device command to which the generic zone control command is translated.

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10. The method of claim 1 wherein the step of translating includes the steps of:

loading a library of vendor specific device commands into a management application based on an identity of a vendor of a device affected by the generic zone control command; and

10 calling the at least one vendor specific device command using the generic zone control command having the same format as the at least one vendor specific device command perform zoning operations within the device affected by the generic zone control command.

15 11. The method of claim 1 wherein the steps of receiving, translating and performing are processed by a management application that controls zoning within switches in a data storage network and wherein the step of translating includes a step of loading a dynamically linked library of vendor specific device commands, selected based on a vendor of a device affected by the generic zone control command, into a memory for use 20 by the management application to control zoning in the device.

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12. A computer system configured to control zoning in a plurality of devices from different vendors in a network, the computer system comprising:

an input-output interface;

a processor; and

5 a memory system coupled to the processor and to the input-output interface and encoded with instructions that form a multi-zone management application that, when performed on the processor, cause the computer system to:

receive, via the input-output interface, a generic zone control command;

translate the generic zone control command to at least one vendor specific

10 device command of a plurality of vendor specific device commands that respectively control zoning in a plurality of different vendor devices coupled to the input-output interface; and

15 perform the at least one vendor device specific command to control zoning in a device coupled to the input-output interface.

13. The computer system of claim 12 further including:

a multi-zone command database containing the plurality of vendor specific device commands; and

wherein the multi-zone management application encoded within the memory

20 system includes instructions that, when performed on the processor, cause the computer system to:

identify a vendor of at least one device within the zone corresponding to the generic zone control command;

25 select a set of vendor specific device commands, from the plurality of vendor specific device commands in the multi-zone command database, that corresponds to the vendor of at least one device within the zone; and

map the generic zone control command to at least one vendor specific device command within the set of vendor specific device commands.

14. The computer system of claim 13 wherein the instructions that select, when performed on the processor, cause the computer system to select the set of vendor specific device commands that are specific to a vendor of a device within the zone to which the generic zone control command is directed.

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15. The computer system of claim 13 wherein the instructions that identify, when performed on the processor, cause of the computer system to:

identify devices within the zone that are affected by the generic zone control command; and

10 identify vendors of the devices within the zone that are affected by the generic zone control command.

16. The computer system of claim 12 wherein:

the plurality of vendor specific device commands within the multi-zone command

15 database include sets of vendor specific device commands; and

wherein the instructions that translate, when performed on the processor, cause the computer system to:

select a set of vendor specific device commands that can control zoning within a device to which the generic zone control command is directed; and

20 dynamically load the set of vendor specific device commands into the memory system to allow the management application to control zoning within the device to which the generic zone control command is directed.

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17. The computer system of claim 16, wherein the instructions that translate, when performed on the processor, cause the computer system to:

select the at least one vendor specific device command, within the set of vendor specific device commands, that performs zoning operations, in the device to which the generic zone control command is directed, in accordance with the generic zone control command; and

map parameters of the generic zone control command to parameters of the at least one vendor specific device command to provide the vendor specific device command with data required to perform the zoning operations in the device.

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18. The computer system of claim 16 wherein the instructions that select the set of vendor specific device commands, when executed, cause the computer system to select the set of the vendor specific device commands based on an identity of a vendor of the device to which the generic zone control command is directed.

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19. The computer system of claim 12 wherein the multi-zone management application is a device management application that can control zoning in a network of switches from different vendors, the network coupled to the input-output interface.

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20. The computer system of claim 12 wherein the instructions that perform, when performed on the processor, cause the computer system to perform the at least one vendor specific device command to control zoning within a device from a vendor that is a vendor of devices that are controlled by the vendor specific device command to which the generic zone control command is mapped.

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21. The computer system of claim 12 wherein the instructions that translate, when performed on the processor, cause the computer system to load a library of vendor specific device commands into a management application based on a vendor of a device affected by the generic zone control command to allow the management application to

5 perform vendor specific device commands in order to carry out the generic zone control command within the device affected by the generic zone control command.

22. The computer system of claim 12 wherein the instructions that translate, when performed on the processor, cause the computer system to load a dynamically linked

10 library of vendor specific device commands, selected by a device identifier coupled to the memory system, based on a vendor of a device affected by the zoning control command, into the memory system for use by the management application to control zoning in the device.

15 23. The computer system of claim 12 wherein the memory system is encoded with at least one command mapping that indicates how the generic zone control command corresponds to the vendor specific device command for a specific vendor device, and wherein the instructions that translate use the command mapping to map the generic zone control command to a format required by the vendor device specific command within the vendor device specific command set.

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24. A computer program product having a computer-readable medium including computer program logic encoded thereon that when performed on a computer system provides a method for controlling zoning within a device, and wherein when the computer program logic is performed on a processor in the computer system, the
- 5 computer program logic causes the processor to perform the operations of:
- receiving a generic zone control command;
 - translating the generic zone control command to at least one vendor specific device command of a plurality of vendor specific device commands that respectively control zoning in a plurality of different vendor devices; and
- 10 performing the at least one vendor specific device command to control zoning in a device.
25. The computer program product of claim 24 wherein the plurality of vendor specific device commands includes sets of vendor specific device commands and wherein the
- 15 computer program logic that causes the processor to perform the operation of translating, when performed on the processor, causes the processor to perform a operations of:
- selecting a set of vendor specific device commands that can control zoning within a device to which the generic zone control command is directed; and
 - dynamically loading the set of vendor specific device commands into a
- 20 management application to allow the management application to control zoning within the device to which the generic zone control command is directed.

26. The computer program product of claim 24 wherein the computer program logic that, when performed on the processor, causes the processor to perform the operation of translating, further includes instructions that, when performed on the processor, cause the processor to perform the operations of:

5 selecting the at least one vendor specific device command, within the set of vendor specific device commands, that performs zoning operations, in the device to which the generic zone control command is directed, in accordance with the generic zone control command; and

10 mapping parameters of the generic zone control command to parameters of the at least one vendor specific device command to provide the vendor specific device command with data required to perform zoning operations in the device.

15 27. A management application that operates to control zoning in devices from different vendors in a data storage network, the management application comprising:

20 a management application user interface that receives a generic zone control command;

25 a multi-vendor application programming interface coupled to the multi-zone management application user interface, the multi-vendor application programming interface obtaining from a multi-zone command database, based on the generic zone control command, a vendor specific command set containing functions that control zoning in a device associated with the generic zone control command;

30 a command mapping accessible by the multi-vendor application programming interface, the command mapping defining mappings between parameters from the generic zone control command to parameters required by the vendor specific commands within the vendor specific command set; and

35 the multi-vendor application programming interface using the command mapping to map the generic zone control command to at least one vendor specific command and performing the at least one vendor specific command to control zoning within a specific vendor device associated with the generic zone control command.

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